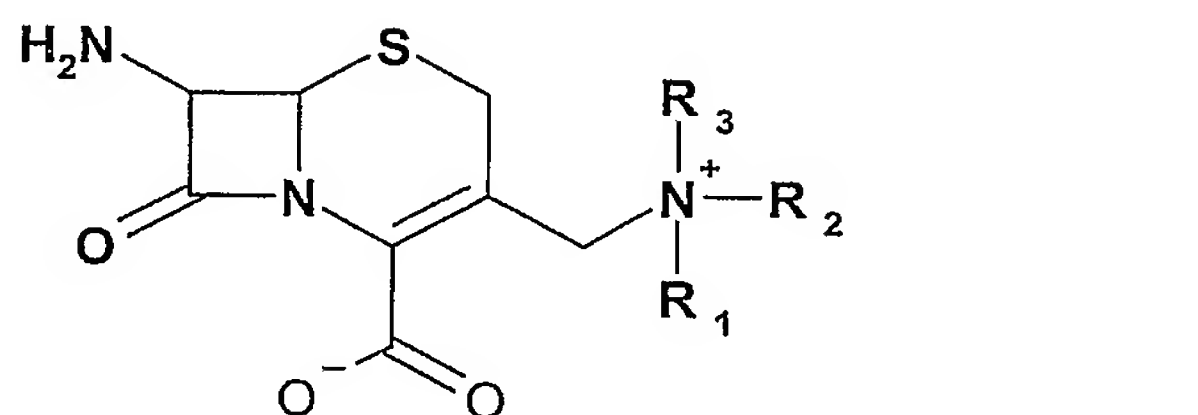


# What we claim is

1. Process for the production of a compound of formula



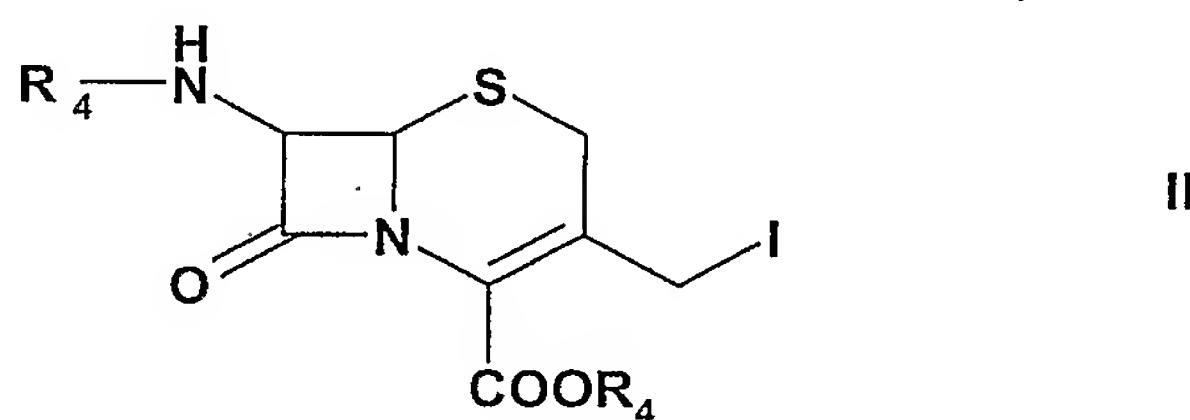
wherein  $R_1$ ,  $R_2$  and  $R_3$ , independently of one another, are alkyl, alkenyl, aryl, hydroxy-( $C_{1-6}$ )alkyl, carbamoyl-( $C_{1-6}$ )alkyl, amino-( $C_{1-6}$ )alkyl, acylamino-( $C_{1-6}$ )alkyl or carboxy-( $C_{1-6}$ )alkyl, or wherein

$R_2$  and  $R_3$  together with the adjacent nitrogen atom, form an alicyclic 5- to 8-membered heterocyclic ring, which, in addition to the nitrogen atom, may also contain a further 1 or 2 hetero atoms selected from the group consisting of oxygen and sulphur, and  $R_1$  signifies alkyl, alkenyl or aryl,

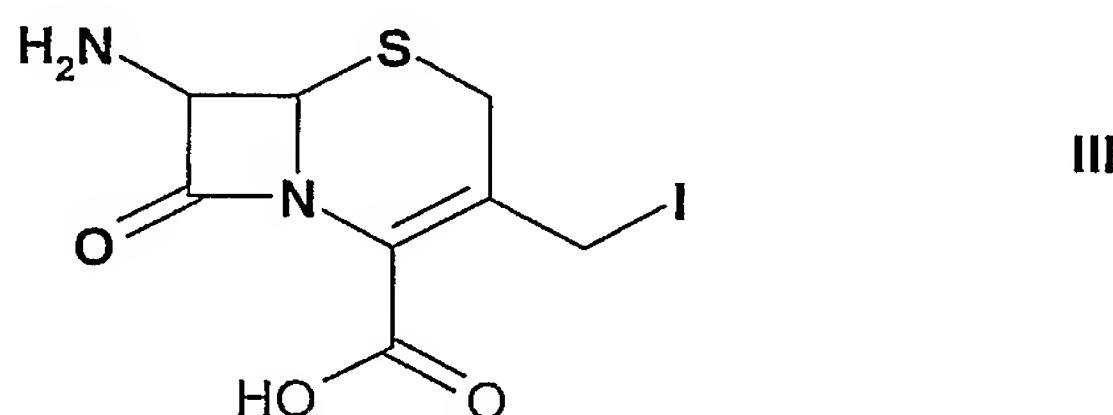
as well as for the production of acid addition salts and/or hydrates of a compound of formula I,

comprising the reaction steps

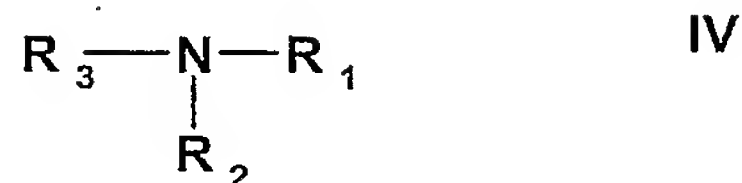
a) desilylation of a compound of formula



wherein  $R_4$  is a silyl-protecting group, by adding a protic solvent, in order to obtain a compound of formula

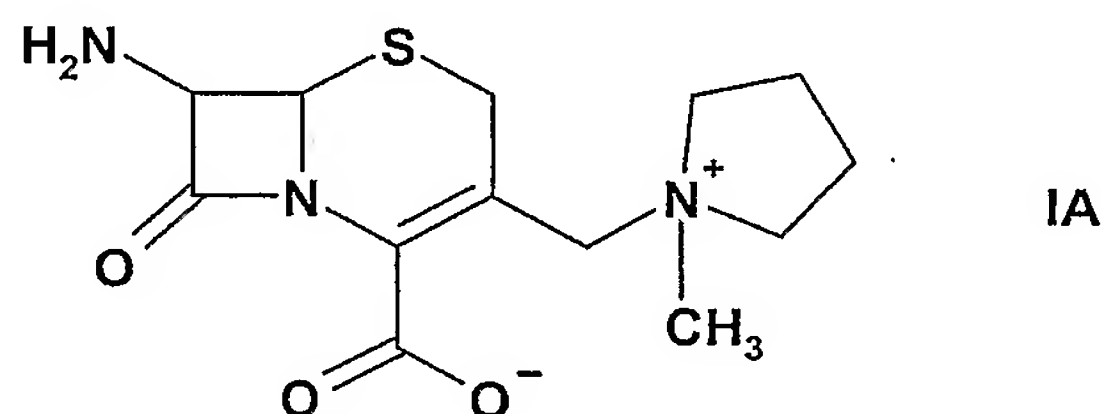


b) reaction of the compound of formula III obtained in step a) with an organic base of formula



wherein  $\text{R}_1$ ,  $\text{R}_2$  and  $\text{R}_3$  have the significances indicated above, in order to obtain a compound of formula I.

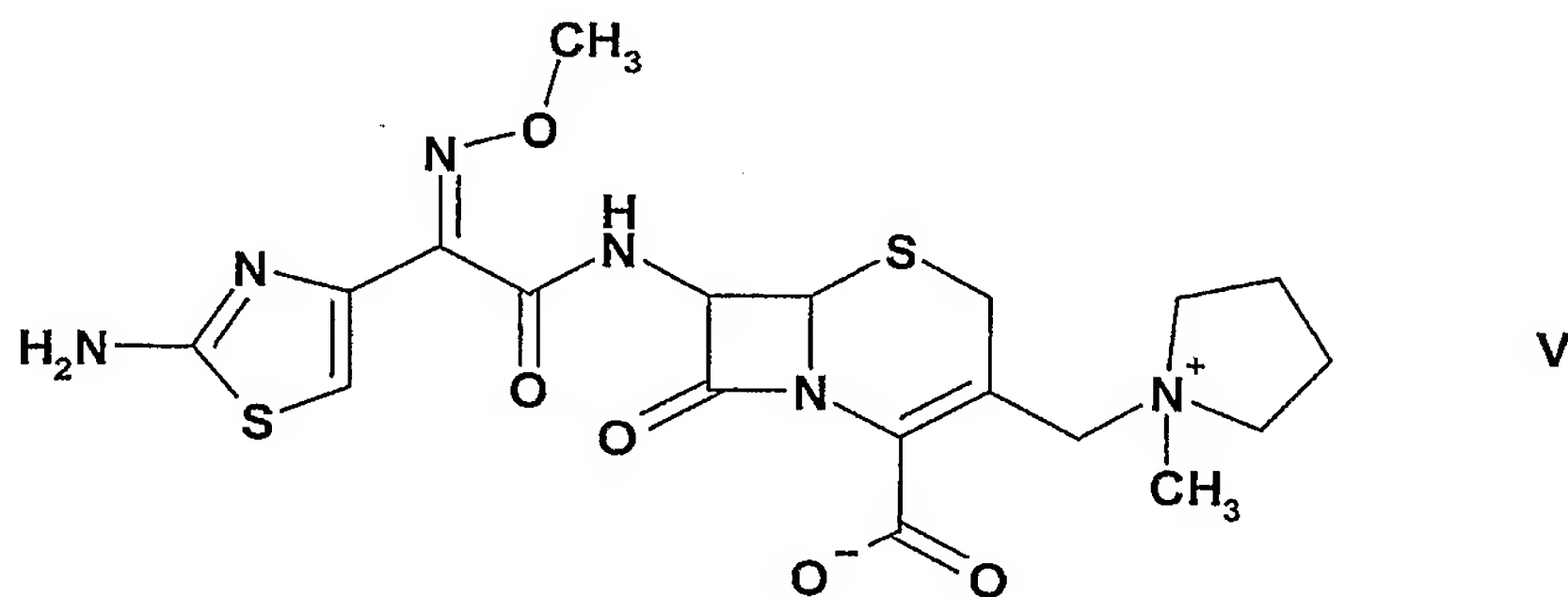
2. Process according to claim 1, whereby steps a) and b) are carried out simultaneously in one reaction container.
3. Process according to one of claims 1 or 2, whereby  $\text{R}_1$ ,  $\text{R}_2$  and  $\text{R}_3$ , independently of one another, are alkyl, alkenyl, aryl or hydroxy( $\text{C}_{1-6}$ )alkyl.
4. Process according to one of claims 1 or 2, whereby  $\text{R}_2$  and  $\text{R}_3$  together represent a  $\text{C}_4$ -alkylene group, and with the adjacent nitrogen atom, form a saturated 5-membered heterocycle, and  $\text{R}_1$  represents a methyl group, so that a compound of formula



is obtained.

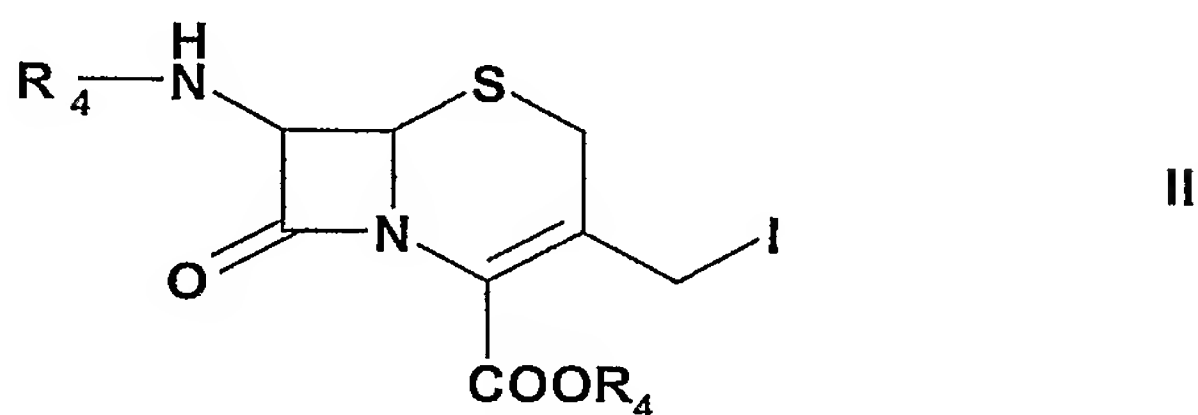
5. Process according to one of claims 1 to 4, wherein the protic solvent is a ( $\text{C}_{1-4}$ )-alcohol or a mixture of several ( $\text{C}_{1-4}$ )-alcohols.
6. Process according to claim 5, wherein the alcohol is methanol, ethanol, isopropanol, n-propanol, 2-methyl-propan-2-ol, glycol, glycerol, a propanediol or a butanediol.
7. Process according to claim 4, whereby the alcohol is isopropanol or 1,2-butanediol.

8. Process according to one of the preceding claims, whereby a compound of formula I obtained from step b) is obtained in the form of an acid addition salt and/or hydrate or is converted into the same.
9. Process according to claim 8, whereby the acid addition salt is a hydriodide or a hydrochloride.
10. Process according to one of claims 8 to 9, whereby the hydrate is a monohydrate.
11. Process for the production of cefepime of formula

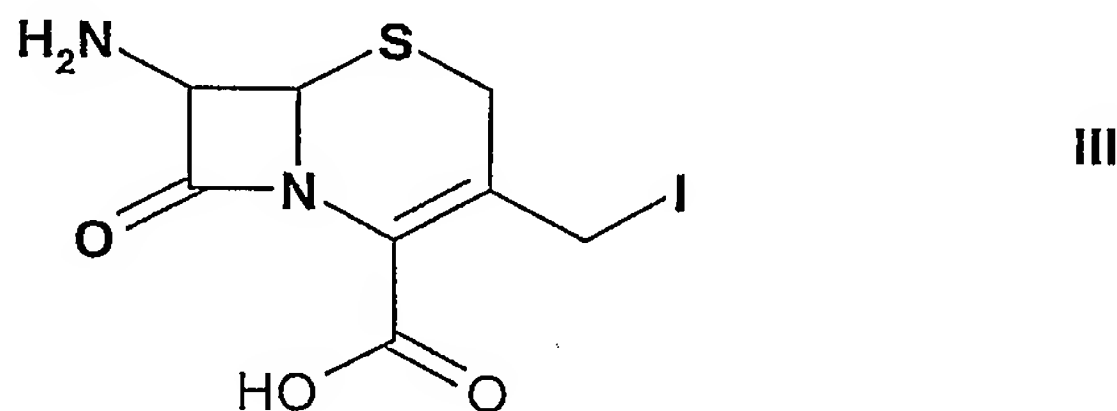


or one of its acid addition salts and/or its hydrates  
comprising the reaction steps

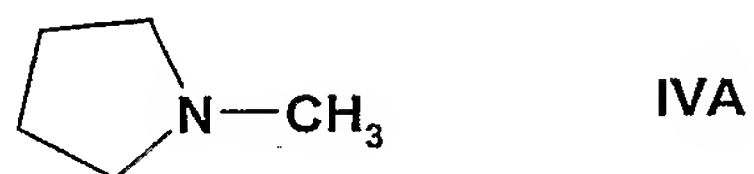
a) desilylation of a compound of formula



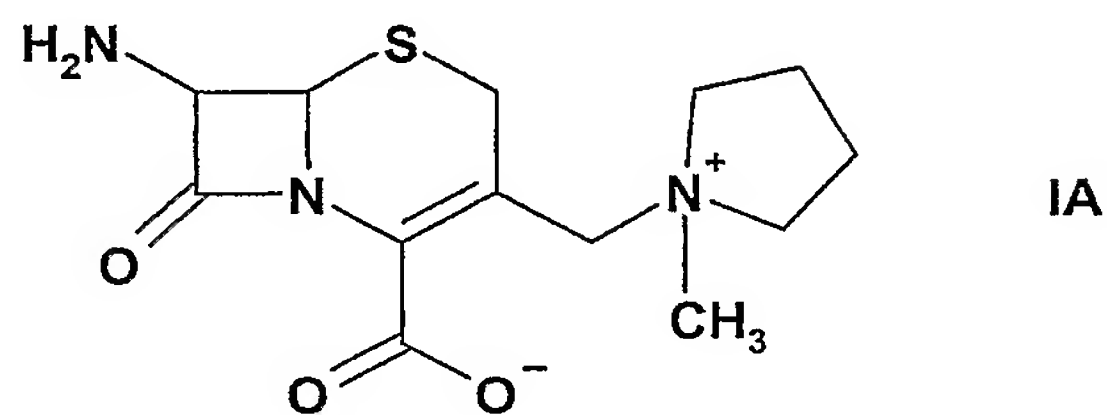
wherein R<sub>4</sub> is a silyl-protecting group, by adding a protic solvent, in order to obtain a compound of formula



b) reaction of the compound of formula III obtained in step a) with a strong organic base of formula



in order to obtain a compound of formula



- c) optional conversion of a compound of formula IA, as obtained from step b), into the form of an acid addition salt and/or a hydrate, and
- d) acylation of the 7-amino group of a compound of formula IA obtained from step b) or of its acid addition salt and/or hydrate obtained from step c), in order to obtain cefepime of formula V.